YOKOGAWA

AQ6370 Series

Optical Spectrum Analyzer

AQ6370B / AQ6373 / AQ6375

VIS to NIR Applications
High resolution & dynamic range
Fast measurement
GP-IB/ Ethernet remote control
USB

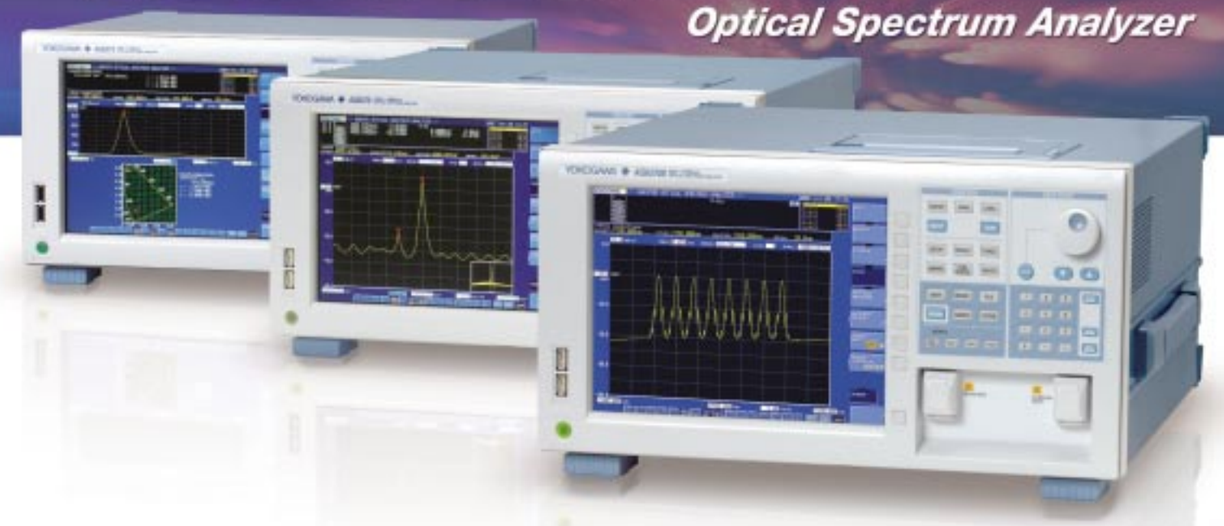
QUALITY ■ INNOVATION ■ FORESIGHT

For more information, go to
tmi.yokogawa.com
Test & Measurement Instruments

Bulletin AQ6370SR-01EN

High Performance Optical Spectrum Analyzers
Meeting Measurement Needs in a Broad Range of Applications

AQ6370 Series
Optical Spectrum Analyzer

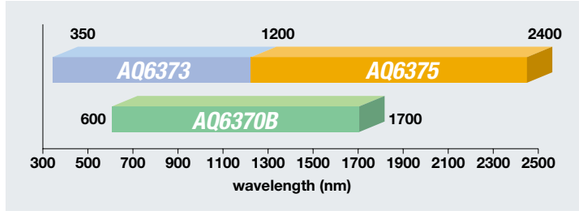


Wide wavelength coverage

- AQ6370B
Standard model optimized to the wavelengths often used in telecommunication applications.

- AQ6373
for short-wavelength including visible light (VIS).
The VIS is from 380 to 780nm.

- AQ6375
for long-wavelength over 2um.



The AQ6373 and AQ6375 can cover the entire wavelength range from 350nm through 2400nm.

World-class optical performance

High Resolution 0.02nm* & High Dynamic Range 70dB*

The advanced monochromator achieves high wavelength resolution and high close-in dynamic range. With the sharper spectral characteristics of the monochromator, spectral signals in close proximity can be separated clearly and measured accurately.

High Sensitivity: -90dBm*

Weak optical signals can be measured accurately and quickly.

- ***7 sensitivity settings***
  Can be selected according to test applications and measurement speed requirements. The settings correspond to the sensitivity from -60 dBm to -90 dBm in approx 5dB steps, in the case of AQ6370B.
- ***High dynamic mode***
  Obtains a better dynamic range by reducing the influence of stray-light, which is caused when the input is a strong optical signal.

Pulsed Light Measurement

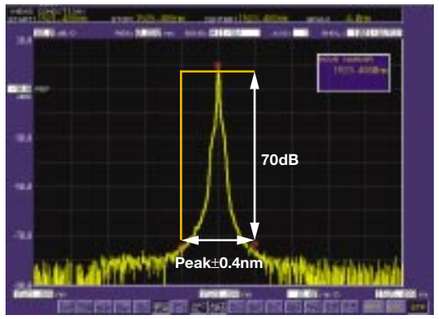
Peak-Hold and External trigger mode
Measure a pulse peak spectrum of a pulsed light signal.
Often used in the transmission loop testing of telecommunication systems, and also in the low power measurement at the early stage of laser chip development to catch the peak power of a pulsed signal.

Free Space Input

- Multimode and single mode fiber on the same OSA.
- Small insertion loss variation at the input connector increases measurement repeatability.
- No damage connecting fibers because there is no physical contact.

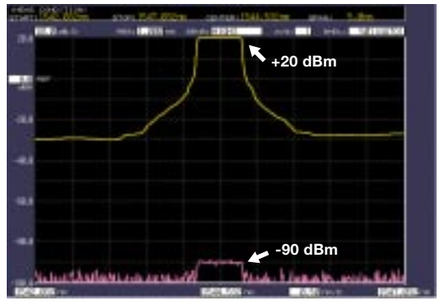
Optical input structure
(note. AQ6373 uses a fixed connector)

Dynamic Range



AQ6370B, Peak ±0.4nm, resolution setting 0.02 nm,
High dynamic mode:ON, typical

Measurement Power Range



AQ6370B, Sensitivity setting: HIGH3, High dynamic mode: OFF, typical

* Those numbers are for AQ6370B, and the dynamic range is a typical value.

Excellent efficiency

Fast Sweep

With an advanced monochromator, faster electrical circuits, and noise reduction techniques, the AQ6370 series achieves fast measurement speed even when measuring a steep spectrum from DFB-LD or DWDM signals, or when measuring a low power signal from a broadband light source.

Fast Remote Interface

AQ6370 series provides faster remote control and data transfer capability.
100x Ethernet interface is 100 times faster
10x GP-IB interface is 10 times faster (compared with the conventional GP-IB used on Yokogawa AQ6317 series optical spectrum analyzer)

Wide Span Sweep yet High Resolution

The 50,001 data sampling points expands measurement range in a single sweep while keeping a high wavelength resolution.This makes your measurement easier and more efficient than conventional systems that use a low number of sampling points and require multiple partial measurements to cover the complete wavelength range.

Easy to Keep Accurate

Ambient condition change, vibration and shock to an optical precision product, like an optical spectrum analyzer, will effect the optical components, and eventually degrade optical performance.
Using standard functions, AQ6370 series can maintain its high optical performance within a couple of minutes so that you can quickly start a measurement.

Optical alignment function

Automatically aligns the optical path in the monochromator using the built-in source to maintain high performance.

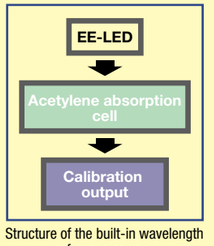
Wavelength calibration function

Automatically calibrates the spectrum analyzer with the built-in wavelength reference or an external light source, to ensure the wavelength accuracy.

Note. There are cases that the optical alignment and wavelength calibration function cannot correct optical performance.
Periodical calibration is also required separately.

Built-in calibration source

- ***Wavelength reference source***
  For the wavelength calibration and optical alignment
  Available on AQ6370B and AQ6375
  Note. SM 9.5/125μm fiber is required.
- ***Optical alignment source***
  For the optical alignment
  Available on AQ6373
  Note. GI 50/125μm fiber is required.
  An external light source is required for the wavelength calibration.

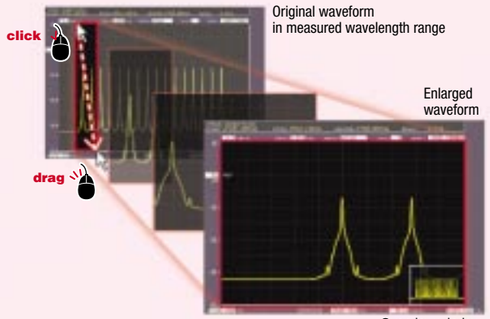


Structure of the built-in wavelength reference source.

Easy Operation

Trace zooming

- *Change display conditions, such as center wavelength and span, by clicking and dragging the mouse.*
- *Enlarge your area of interest instantly and move it at will.*
- *No need for another measurement to modify the display conditions.*



Mouse & Keyboard operation

- *Front panel operation proven intuitive and easy to use by our many of users.*
- *Even easier with a mouse.*
- *The keyboard helps enter labels and file names.*

7 individual traces

- *Simultaneous multi-trace display*
- *Calculation between traces*
  (subtraction between traces)
- *Max/Min hold*

Various Analysis Functions

Spectrum analysis functions

13+ data analysis functions for popular applications

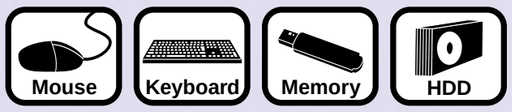
•Built-in analysis functions:

- Spectral width analysis
- WDM (OSNR) analysis
- WDM-NF (EDFA) analysis
- DFB-LD analysis
- FP-LD analysis
- LED analysis
- SMSR analysis
- Optical power analysis
- Various filter analysis
- Color analysis (AQ6373 only)

WDM (OSNR) Analysis Function

Result table

USB ports



USB 1.1 compatible

Easy Data Handling

USB Storage

-USB 1.1 compatible interfaces support large size removable memory devices such as Flash ROM and hard disk drives (HDD).
- Easy way to carry a large number of data files.

128MB Internal storage

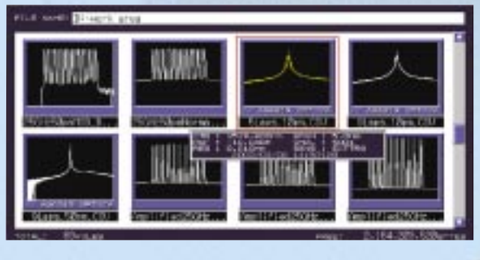
- Save over 5,000 data files

File types and formats:

- Trace: Binary and ASCII (CSV)
- Graphic: Bitmap (BMP) and TIFF
- Analysis results: Binary and ASCII (CSV)
- Template: ASCII (CSV)
- System setup: Binary
- Macro program: Binary

Thumbnail File Preview

Easy to find a particular file out of thousands of files in internal and external storage.



Optical input

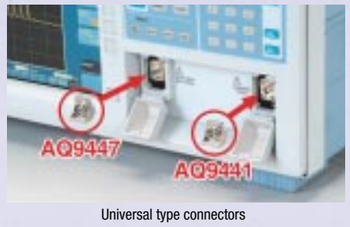
(Free space input)

Calibration output

(Wavelength reference source or optical alignment source)

Optical connectors
for optical input & calibration output

AQ6370B & AQ6375: Universal type (FC, SC or ST).
AQ6373: FC type



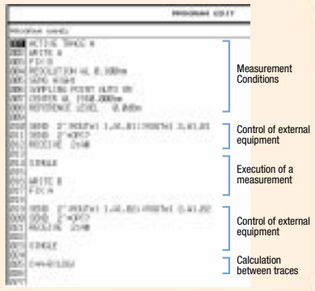
Universal type connectors

Building Automated Test System

Macro Programming

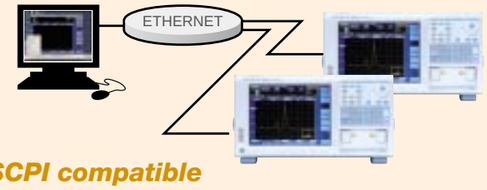
Build a simple auto-measurement system

- No external PC is required.
- Easy to create test program by recording the user's actual key strokes and parameter selections.
- Can control external equipment through the remote interfaces.



Fast remote interfaces

- *GP-IB, RS-232, and Ethernet (10/100Base-T) interfaces*
  Easy to control with an external PC and to build an automated test system.
- *Improve the testing throughput of test systems*
  by the fast measurement, command processing, and data transfer speed.



SCPI compatible

The standard remote commands are compatible with SCPI, which is an ASCII text based standard code and format that conforms to IEEE-488.2.

AQ6317 Emulation Mode

Supports the private remote commands of Yokogawa's best selling AQ6317 series and AQ6315 for users to easily upgrade from their current automated test environment.

Note. some commands may not be compatible due to changes in specifications and functions.

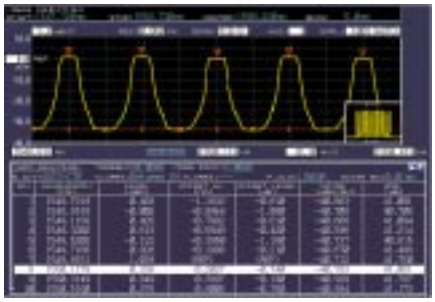
LabVIEW® Driver available

AQ6370B 600 to 1700nm

STANDARD

- ***Wavelength accuracy : ±0.02 nm***
- ***Wavelength resolution : 0.02 to 2 nm***
- ***Max input power : +20 dBm***
- ***Level sensitivity : −90 dBm***
- ***Dynamic range : 70dB (typ)***
- ***Single-mode and Multimode fibers***
- ***Built-in wavelength reference source for wavelength calibration and optical alignment***
- ***Universal type optical connectors***
- ***Optimized performance and functions for WDM systems***
  - ***High wavelength linearity and Level flatness (1450 to 1620nm)***
  - ***WDM (OSNR) analysis and EDFA analysis***
- ***X-axis : nm / THz***

OSNR measurement on DWDM system



The WDM(OSNR)analysis function finds channel wavelength. power, channel spacing, and OSNR.

Optical amplifier(EDFA)measurement

The WDM-NF(EDFA)analysis finds channel wavelength, Gain and Noise figure(NF).

➤Applications

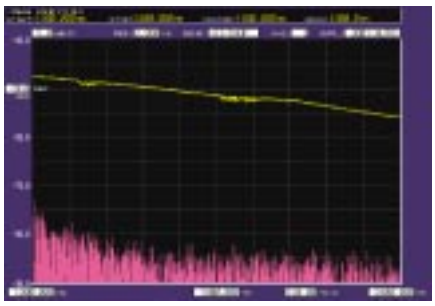
- Optical active devices (Laser diode/Fiber laser/Optical amplifier/Optical transceiver)
- Optical passive devices (Filter/FBG/AWG/WSS/ROADM/Optical fiber)
- Optical transmission equipment (DWDM, CWDM)
- Development support of Applied photonics equipment

AQ6375 1200 to 2400nm

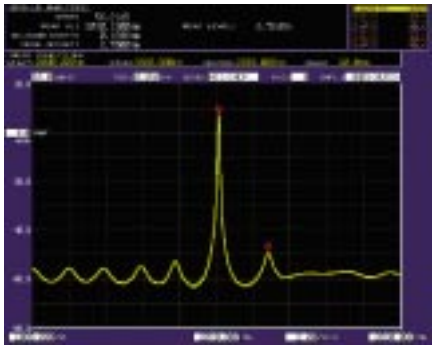
LONG wavelength

- ***Wavelength accuracy : ±0.05 nm***
- ***Wavelength resolution : 0.05 to 2 nm***
- ***Max input power : +20 dBm***
- ***Level sensitivity : −70 dBm***
- ***Dynamic range : ≥55dB***
- ***Single-mode and Multimode fibers***
- ***Built-in wavelength reference source for wavelength calibration and optical alignment***
- ***Universal type optical connectors***
- ***Various analysis functions***
- ***X-axis : nm / THz / cm^{-1}***

The spectrum of a white light source (yellow) and the background noise of AQ6375 (red)



2010nm DFB-LD measurement



Resolution: 0.05nm, Span: 20 nm, Sensitivity: HiGH1/CHOP

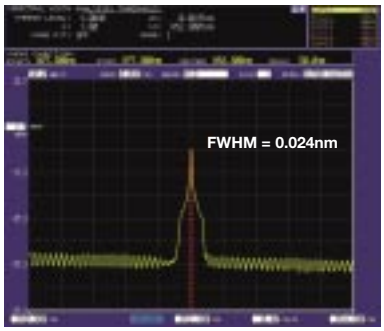
➤Applications

- Optical active devices (Laser diode/Fiber laser)
- Optical passive devices (Filter/FBG/Specialty optical fiber)
- Development support of Applied photonics equipment
  - •Measurement/sensing area: Gas/Environmental sensing
  - •Medical/Bio area
  - •Telecom area: Optical fiber/Free-space communication

AQ6373 350 to 1200nm SHORT wavelength

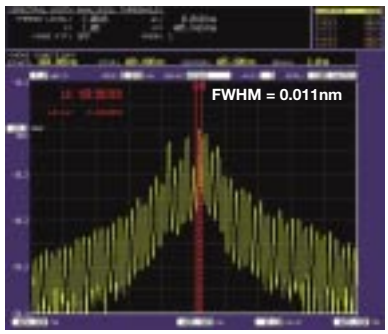
- **Wavelength accuracy: ±0.05 nm**
- **Wavelength resolution : 0.02 to 10 nm and 0.01nm (400 to 470nm)**
- **Max safe input power : +20 dBm**
- **Level sensitivity : −80 dBm**
- **Dynamic range : ≥60dB**
- **Single-mode, Multimode, and Large-core fibers**
- **Built-in optical alignment source**
- **Wavelength calibration with an external reference source**
- **Various analysis functions including the Color analysis function for VIS**

852nm DFB-LD measurement
(Resolution setting: 0.02nm)



The details of oscillation modes can be measured with high resolution of 0.02nm

405nm FP-LD measurement
(Resolution setting: 0.01nm)



In 400-470nm range, achieves even higher resolution.

➤Applications

- Optical active devices (Laser diode/Fiber laser)
- Optical passive devices (Filter/FBG/Specialty optical fiber)
- Development support of Applied photonics equipment
  - •Medical/Bio area: Laser therapy, DNA sequencing, Microscope
  - •Industrial area: Laser micro-machine, laser maker
  - •Home Electronics area: Laser projector, Next-gen optical disc, LED products
  - •Measurement/sensing area: LIDAR, Interferometer
  - •Telecom area: Plastic Optical fiber (POF) communication

AQ6370 Viewer

Real-time remote operation

(Optional application software)

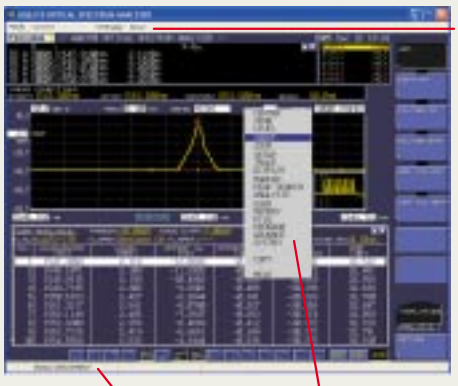
The AQ6370Viewer is a package of PC application software for the AQ6370 series Optical Spectrum Analyzer.

- The same user interface and functions as the mainframe
- Display and analyze waveform data acquired by the mainframe
- Remote control and file transfer capability

Viewer function

Trace data files saved on the AQ6370 series can be retrieved and analyzed on a PC.

Note. Measurement cannot be initiated in the Viewer mode



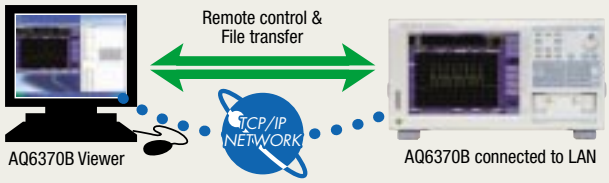
Remote control function

The remote control allows you to set measurement conditions and to execute a measurement on the mainframe from anywhere on an Ethernet network. Upon completion of a measurement on the mainframe, the AQ6370Viewer downloads and shows the updated traces.

Note. Data transfer speed varies depending on PC and network performance. The program function is not supported. Some other restrictions may apply.

File transfer function

Transfer files from the mainframe to the PC and vice versa. The macro program file edited on the AQ6370Viewer can also be transferred to the mainframe.



- PC Requirements

<Hardware> HDD: 50 MB or more of available disk space, Memory: 512 MB or more
<OS> Windows 2000 (Service Pack 4 or later) or Windows XP (Service Pack 1 or later)

- Bundled software AQ6370Viewer consists of the following software.

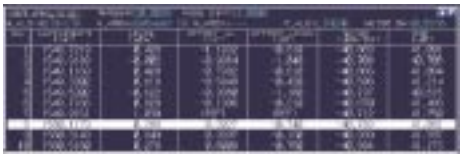
- AQ6370 Viewer : for AQ6370 Optical spectrum Analyzer (discontinued)
- AQ6370B Viewer : for AQ6370B Optical spectrum Analyzer
- AQ6375 Viewer : for AQ6375 Optical spectrum Analyzer
- AQ6373 Viewer : for AQ6373 Optical spectrum Analyzer

Test Applications

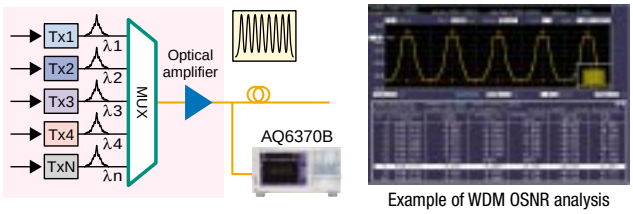
AQ6370B

■ WDM OSNR TEST

AQ6370B's wide close-in dynamic range allows accurate OSNR measurement of DWDM transmission systems (up to 50 GHz spacing). The built-in WDM analysis function analyzes the measured waveform and shows peak wavelength, peak level and OSNR of WDM signals up to 1024 channels simultaneously. The curve fit function is used to accurately measure noise levels.



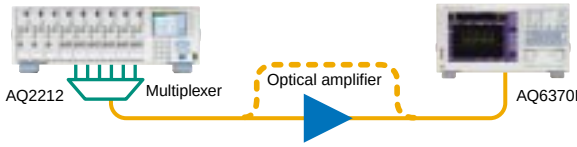
Example of analyzed data table



Example of WDM OSNR analysis

■ SIMPLE EDFA TEST

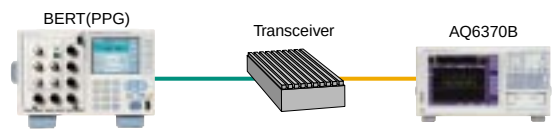
The ASE interpolation method is used to measure gain, NF, and key parameters for optical fiber amplifier evaluation. With WDM-NF analysis function, up to 1024 channels of multiplexed signals can simultaneously be tested. An ASE level for NF measurements is calculated by using a curve-fit function for each WDM channel. The curve-fit and source spontaneous emission (SSE) suppress function enhance a measurement accuracy.

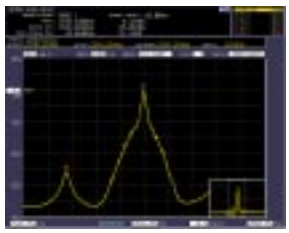


WDM waveform before/after amplification by EDFA

■ TRANSCEIVER / LD TEST

In conjunction with bit error rate test (BERT) equipment, the AQ6370B can measure the center wavelength and spectral width of transceivers and LD modules. Various built-in analysis functions, such as DFB-LD, FP-LD (VCSEL), and LED facilitate test process.



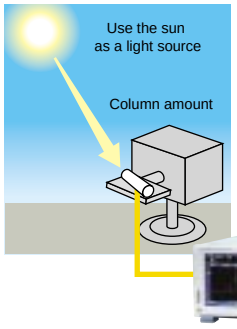


Example waveform and analysis result of transceiver output

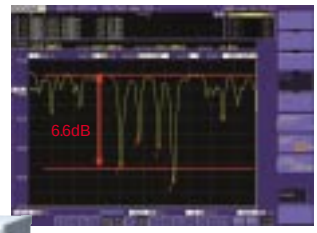
AQ6375

■ Global warming gas (Methane) measurement

The global warming gasses such as CO_2, SO_2, NOX, and Methane, have strong optical absorption around 2μm wavelength region. The distribution and concentration of those gasses in the atmosphere can be determined by measuring the optical absorbance.
Simply connecting the collected sunlight using an optical fiber, AQ6375 can measure the optical absorbance corresponding to the gas' column concentration in the atmosphere.



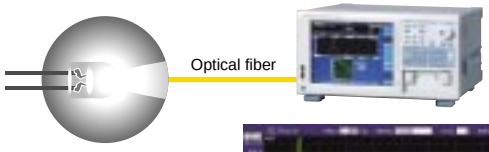
Optical absorption spectrum of Methane

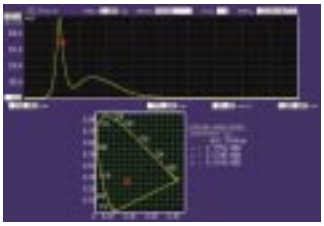


AQ6373

■ Visible LED Test

The optical spectrum of visible LEDs used in lighting, indication, measurement and applications can be measured and analyzed.
By supporting the large core fiber input, AQ6373 can efficiently get the LED light and measure its spectrum.The built-in color analysis function automatically evaluates a dominant wavelength and chromatic coordinates.



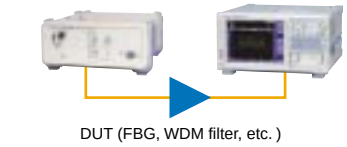


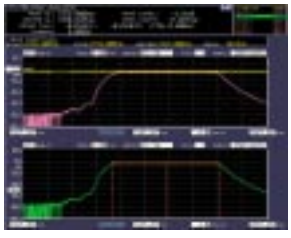
Color analysis of White LED

All models

■ PASSIVE COMPONENT TEST

In conjunction with a white light source, an ASE light source or other broadband light source, you can simply perform evaluation of passive devices such as WDM filters and FBG. The AQ6370 series' superb optical characteristics enable higher-resolution and wider dynamic range measurements.
The built-in optical filter analysis function simultaneously reports peak/bottom wavelength, level, crosstalk, and ripple width.





Example of CWDM filter measurement

Major Specifications

General Specifications

Items	Specifications
Electrical interface	GP-IB x 2 (standard/controller), RS-232, Ethernet, USB 1.1 x2, PS/2 (keyboard), SVGA output, Analog output port, Trigger input port, Trigger output port
Remote control *	GP-IB, RS-232, Ethernet (TCP/IP) AQ6317 series compatible commands (IEEE488.1) and IEEE488.2
Data storage	Internal storage: Max. 128M Bytes, Internal memory: 64 Traces, 64 programs, 3 template lines, External storage: USB storage (memory/HDD), FAT32 format File types: CSV (text), Binary, BMP, TIFF
Display **	10.4-inch color LCD (Resolution: 800 x 600)
Printer	Built-in thermal printer (Factory installed option)
Dimensions	426 (W) x 221 (H) x 459 (D) mm (Excluding protector and handle)
Mass	AQ6370B: 19kg, AQ6373: 20kg, AQ6375: 27kg (Without printer option)
Power requirement	100 to 240 VAC, 50/60 Hz, approx. 150 VA
Environmental conditions	Performance guarantee temperature: + 18 to + 28 C°, Operating temperature: +5 to +35 C°, Storage temperature: -10 to +50 C°, Humidity: ≤80 %RH (no condensation)

* : Some AQ6317 series commands may not be compatible due to changes in specifications or functions.
** : Liquid crystal display may include few defective pixels (within 0.002% with respect to the total number of pixels including RGB). There may be few pixels on the liquid crystal display that do not emit all the time or remains ON all the time. These are not malfunctions.

AQ6370B

Items	Specifications
Wavelength range *1	600 to 1700 nm
Span *1	0.5 nm to 1100 nm (full span), and 0nm
Wavelength accuracy *1, *2, *5	± 0.02 nm (1520 to 1580 nm), ± 0.04 nm (1450 to 1520 nm, 1580 to 1620 nm), ± 0.10 nm (Full range)
Wavelength linearity *1, *2, *5	± 0.01 nm (1520 to 1580 nm), ± 0.02 nm (1450 to 1520 nm, 1580 to 1620 nm)
Wavelength repeatability *1, *2,	± 0.005 nm (1 min.)
Wavelength resolution setting *1, *2	0.02, 0.05, 0.1, 0.2, 0.5, 1 and 2 nm
Wavelength resolution accuracy *1, *2, *5	± 5 % (1450 to 1620 nm, Resolution setting: ≥ 0.1 nm, Resolution correction: ON, Number of sampling: AUTO)
Minimum sampling resolution *1	0.001 nm
Number of sampling	101 to 50001, AUTO
Level sensitivity setting	NORM_HOLD, NORM_AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3
High dynamic mode	SWITCH (Sensitivity: MID, HIGH1-3)
Level sensitivity *2, *3, *4, *7	-90 dBm (1300 to 1620 nm), -80 dBm (1000 to 1300 nm), -60 dBm (600 to 1000 nm) (Sensitivity: HIGH3)
Maximum input power *2, *3	+ 20 dBm (Per channel, full range)
Maximum safe input power *2, *3	+ 25 dBm (Total input power)
Level accuracy *2, *3, *4, *6	± 0.4 dB (1310/1550 nm, Input level: -20 dBm, Sensitivity: MID, HIGH1-3)
Level linearity *2, *3	± 0.05 dB (Input level: -50 to +10 dBm, Sensitivity: HIGH1-3)
Level flatness *2, *3, *6	± 0.1 dB (1520 to 1580 nm), ± 0.2 dB (1450 to 1520 nm, 1580 to 1620 nm)
Polarization dependence *2, *3, *6	± 0.05 dB (1550/1600 nm), ± 0.08 dB (1310 nm)
Dynamic range *1, *2, *8	37 dB (Peak ± 0.1 nm, Resolution: 0.02 nm), 55 dB (Peak ± 0.2 nm, Resolution: 0.02 nm), 45 dB (Peak ± 0.2 nm, Resolution: 0.05 nm), 62 dB (Peak ± 0.4 nm, Resolution: 0.05 nm), 40 dB (Peak ± 0.2 nm, Resolution: 0.1 nm), 57 dB (Peak ± 0.4 nm, Resolution: 0.1 nm)
Applicable fiber	SM, GI (50/125 μm, 62.5/125 μm)
Optical connector	Optical input : AQ9447 (*) connector adapter (option) required. Calibration output: AQ9441 (*) connector adapter (option) required. (*):connector type FC, SC, or ST type
Built-in calibration light source	Wavelength reference source (For optical alignment and wavelength calibration)
Sweep time *1, *7, *9	NORM_AUTO: 0.5 sec, NORMAL: 1 sec, MID: 2 sec, HIGH1: 5 sec, HIGH2: 20 sec, HIGH3: 75sec
Warm-up time	Minimum 1 hour (After warming up, optical alignment adjustment with built-in light source is required.)

*1 : Horizontal scale: Wavelength display mode.
*2 : With 9.5/125 μm single mode fiber, after 2 hours of warm-up, after optical alignment with built-in reference light source.
*3 : Vertical scale: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.
*4 : With 9.5/125 μm single mode fiber (B1.1 type defined on IEC60793-2, PC polished, mode field diameter: 9.5 μm, NA : 0.104 to 0.107).
*5 : After wavelength calibration with built-in reference light source.
*6 : Temperature condition changes to 23 ± 3C° at 0.05 nm resolution setting.
*7 : High dynamic mode: OFF, Pulse light measurement mode: OFF, TLS sync sweep: OFF, Resolution correction: OFF.
*8 : 1523nm, High dynamic mode: SWITCH, Resolution correction: OFF
*9 : Span: ≤ 100 nm, Number of sampling: 1001, Average number: 1.

Major Specifications

AQ6373

Items	Specifications
Wavelength range *1	350 to 1200 nm
Span *1	0.5 nm to 850 nm (full span), and 0nm
Wavelength accuracy *1	± 0.05 nm (633nm), ± 0.20 nm (400 to 1100nm) (After wavelength calibration with 633nm He-Ne laser.)
Wavelength resolution setting *1, *2	0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10 nm (full range), and 0.01nm (400 to 470 nm)
Minimum sampling resolution *1	0.001 nm
Number of sampling	101 to 50001, AUTO
Level sensitivity setting	NORM_HOLD, NORM_AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3
High dynamic mode	SWITCH (Sensitivity: MID, HIGH1-3)
Level sensitivity *3	-80 dBm (500 to 1000 nm), -60 dBm (400 to 500 nm, 1000 to 1100 nm) (Typical, Resolution setting: ≥ 0.2nm, Averaging: 10 times, Sensitivity: HIGH3)
Maximum safe input power *3	+ 20 dBm (550 to 1100nm), + 10 dBm (400 to 550nm) (Total input power)
Level accuracy *2	± 1.0 dB (850 nm, Input level: -20 dBm, Resolution setting: ≥ 0.2 nm, Sensitivity: MID, HIGH1-3, SMF [MFD5μm@850nm, NA0.14])
Level linearity *3	± 0.2 dB (Input level: -40 to 0 dBm, Sensitivity: HIGH1-3)
Dynamic range *1	60 dB (Peak ± 0.5 nm, Resolution setting: 0.02 nm, 633nm, Sensitivity: HIGH1-3)
Applicable fiber	SM, GI (50/125 μm, 62.5/125 μm), Large core fiber (up to 800 μm)
Optical connector	FC type (Optical input and Calibration output)
Built-in calibration light source	Optical alignment source (for optical alignment. Wavelength reference is not equipped.)
Sweep time *1, *4	NORM_ AUTO: 0.5 sec, NORMAL : 1 sec, MID: 2 sec, HIGH1: 5 sec, HIGH2: 20 sec, HIGH3: 75 sec
Warm-up time	Minimum 1 hour (After warming up, optical alignment adjustment with built-in light source is required.)

Performance and functions can be limited by type of used fiber. The specifications are only guaranteed when a single mode fiber in which light travels in single mode at measured wavelength is used. In case that measured wavelength is less than the cut-off wavelength of the used fiber, or a multimode fiber is used, a measured spectrum may be inaccurate due to a speckle noise. Please be cautious especially when measuring high coherency sources like gas laser and Laser diode.

***1 :** Horizontal scale: Wavelength display mode.
***2 :** Actual wavelength resolution varies according to a measured wavelength. Actual resolution at 10nm resolution setting is about 8nm at most.
***3 :** Vertical scale: Absolute power display mode.
***4 :** High dynamic mode: OFF, Number of sampling: 1001, Average number: 1, Span: ≤ 100 nm excluding 450 to 470 nm and 690 to 700 nm.

AQ6375

Items	Specifications
Wavelength range *1	1200 to 2400 nm
Span *1	0.5 nm to 1200 nm (full span), and 0nm
Wavelength accuracy *1, *2, *5	± 0.05 nm (1520 to 1580 nm), ± 0.10 nm (1580 to 1620 nm), ± 0.50 nm (Full range)
Wavelength repeatability *1, *2	± 0.015 nm (1 min.)
Wavelength resolution setting *1, *2	0.05, 0.1, 0.2, 0.5, 1 and 2 nm
Minimum sampling resolution *1	0.002 nm
Number of sampling	101 to 50001, AUTO
Level sensitivity setting	NORM_HOLD, NORM_AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3 (Only High dynamic mode (/CHOP) in HIGH1-3)
Level sensitivity *2, *3, *4, *6	-70 dBm (1800 to 2200 nm), -67 dBm (1500 to 1800 nm, 2200 to 2400 nm), -62 dBm (1300 to 1500 nm) (Sensitivity: HIGH3)
Maximum input power *2, *3	+ 20 dBm (Per channel, full wavelength range)
Maximum safe input power *2, *3	+ 25 dBm (Total input power)
Level accuracy *2, *3, *4, *8	± 1.0 dB (1550 nm, input level: -20 dBm, Sensitivity: MID, HIGH1-3)
Level linearity *2, *3	± 0.05 dB (Input level: -30 to +10 dBm, Sensitivity: HIGH1-3)
Polarization dependence *2, *3, *8	± 0.1 dB (1550 nm)
Dynamic range *1, *2	45 dB (Peak ± 0.4 nm, resolution: 0.05 nm), 55 dB (Peak ± 0.8 nm, resolution: 0.05 nm) (1523nm, Sensitivity: HIGH1-3)
Applicable fiber	SM, GI (50/125 μm, 62.5/125 μm)
Optical connector	Optical input : AQ9447 (*) connector adapter (option) required. Calibration output: AQ9441 (*) connector adapter (option) required. (*):connector type FC, SC, or ST type
Built-in calibration light source	Wavelength reference source (for optical alignment and wavelength calibration)
Sweep time *1, *6, *7	NORM_AUTO: 0.5 sec, NORMAL: 1 sec, MID: 10 sec, HIGH1: 20 sec
Warm-up time	Minimum 1 hour (After warming up, optical alignment adjustment with built-in light source is required.)

***1 :** Horizontal scale: Wavelength display mode.
***2 :** With 9.5/125 μm single mode fiber, after 2 hours of warm-up, after optical alignment with built-in reference light source.
***3 :** Vertical scale: Absolute power display mode, Resolution setting: ≥ 0.1 nm.
***4 :** With 9.5/125 μm single mode fiber (B1.1 type defined on IEC60793-2, PC polished, mode field diameter: 9.5 μm, NA: 0.104 to 0.107).
***5 :** After wavelength calibration with built-in reference light source, Sampling resolution: ≤ 0.003 nm, Sensitivity: MID, HIGH1-3
***6 :** Pulse light measurement mode: OFF, TLS sync sweep: OFF.
***7 :** Span: ≤ 100 nm, Number of sampling: 1001, Average number: 1.
***8 :** Temperature condition changes to 23 ± 3C° at 0.1 nm resolution setting.

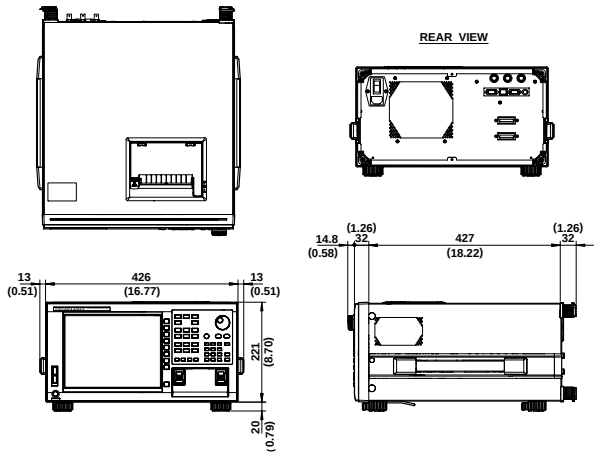
Functions

Measurement	
Measurement mode	CW light, Pulsed light, External trigger, Air/vacuum wavelength, TLS synchronized sweep (excl. AQ6373)
Sweep mode	Repeat, Single, AUTO (Self-configuration), Sweep between line markers, Zero span sweep (0 nm span)
Condition settings	Center wavelength, Span, Number of sampling, Wavelength resolution, Sensitivity, High dynamic mode, Number of averaging (1 to 999 times)
Others	Sweep status output, Analog output
Display	
Vertical scale	Level scale(0.1 to 10 dB/div. and linear), Level sub-scale(0.1 to 10 dB/div. and linear), Reference level, Divisions (8, 10 or 12), power spectral density (dB/nm), dB/km, %, Noise mask
Horizontal scale	Wavelength (nm), Frequency (THz), Wave number (cm^{-1}) (AQ6375 only), Trace zoom in/out
Display mode & items	Normal display, Split display, Data table, Label, Template, Measurement conditions
Trace	
Trace functions	7 independent traces, Maximum/Minimum hold, Calculation between traces, Normalizing, Curve fit, Peak curve fit, Marker curve fit, Roll averaging (2 to 100 times)
Others	Trace copy/clear function, Write/Fix setting, Display/Blank setting
Marker & Search	
Marker	Delta markers (Max. 1024), Vertical/horizontal line markers
Search	Peak, Bottom, Next peak, Next bottom, Auto-search (On/OFF), Search between horizontal line markers, Search zoomed area

Data analysis	
Analysis functions	Spectral width (threshold, envelope, RMS, peak-RMS, notch), WDM (OSNR) analysis, EDFA-NF analysis (excl.AQ6373), Filter peak/bottom analysis, WDM filter peak/bottom analysis, DFB-LD/ FP-LD/ LED analysis, SMSR analysis, Power analysis, PMD analysis, Color analysis (AQ6373 only), Pass/Fail analysis with template
Others	Auto-analysis(ON/OFF), Analysis between horizontal line markers, Analysis in zoomed area
Automated measurement	
Program function	64 programs, 200 steps per program
Other functions	
Optical alignment	Auto-optical alignment with built-in light source
Wavelength calibration	Auto-wavelength calibration with built-in wavelength reference source (AQ6370&AQ6375 only) or an external reference source. Note. AQ6373 requires an external reference source for wavelength calibration.

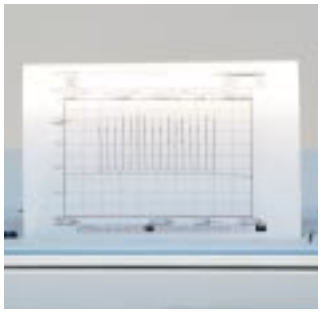
Dimensions

Unit : mm
(approx. inch)



Factory Installed Options

Built-in Printer



An optional built-in thermal printer is provided to instantly print out a screenshot of the display, the analysis results, a marker list and a macro program list.
Accessory: printer roll paper (1 roll)

Optical connector adapters (AQ6370B&AQ6375)

For optical input port
AQ9447 Connector Adapter
/FC, /SC, /ST

For calibration output port
AQ9441 Universal Adapter
/RFC, /RSC, /RST

Ordering Information

Models and Suffix codes

AQ6370B & AQ6375

Model	Suffix code	Descriptions	
735302		***AQ6370B Optical Spectrum Analyzer***	
735305		***AQ6375 Optical Spectrum Analyzer***	
Power cord	-D	UL/CSA Standard	
	-F	VDE Standard	
	-R	AS Standard	
	-Q	BS Standard	
	-H	GB Standard	
Factory installed options	/FC	AQ9447(FC) Connector adapter	for optical input
	/SC	AQ9447(SC) Connector adapter	
	/ST	AQ9447(ST) Connector adapter	
	/RFC	AQ9441(FC) Universal adapter	for calibration output
	/RSC	AQ9441(SC) Universal adapter	
	/RST	AQ9441(ST) Universal adapter	
	/B5	Built-in thermal printer	

AQ6373

Model	Suffix code	Descriptions
735303		***AQ6373 Optical Spectrum Analyzer***
Power cord	-D	UL/CSA Standard
	-F	VDE Standard
	-R	AS Standard
	-Q	BS Standard
	-H	GB Standard
Factory installed option	/B5	Built-in thermal printer

Accessories *(optional)*

Model	Suffix code	Descriptions
735371		AQ6370 Viewer (Including AQ6370, AQ6370B, AQ6375, and AQ6373 Viewers)
810804602		AQ9447 Connector Adapter
Connector type	-FCC	FC type
	-SCC	SC type
	-STC	ST type
813917321		AQ9441 Universal Adapter
Connector type	-FCC	FC type
	-SCC	SC type
	-STC	ST type
751535-E5		19 inch Rack mount kit
B9988AE		Printer roll paper (10 m roll, 10 rolls/1 unit)

Related Products

Multi Application Test System
AQ2200 system

Modular Platform

Tunable Laser Source
AQ2200-136

S+C+L band

White Light Source
AQ4305

Broadband

Note

- Before operating the product, read the user's manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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